

ABSTRACT

Methods and materials for sealing and insulating a fuel cell plate are disclosed. The disclosed process includes applying a coating precursor on at least one surface of the fuel cell plate, and curing the coating precursor by exposure to radiation. Disclosed coating precursors include those containing an acrylated oligomer and a photoinitiator, which can polymerize in response to ultraviolet or electron beam radiation. Other disclosed coating precursors are those that can polymerize in response to exposure to infrared radiation or to heating, and include epoxy nitrile resins and organopolysiloxane resins. The disclosed processes and coating precursors provide certain advantages over conventional methods and designs for insulating and sealing fuel cell plates since the disclosed coating precursors can be quickly and precisely applied to fuel cell plates by, for example, screening printing.